

Listing of CLAIMS

1. (Currently Amended) A support for an acoustic resonator, comprising:
at least one bilayer assembly supporting an overlying acoustic resonator, comprising:
a layer of high acoustic impedance material; and
a layer of low acoustic impedance material made of a low electrical permittivity material, wherein the low acoustic impedance material comprises SiOC;
wherein the layer of low acoustic impedance material has a thickness of less than 0.7 μm , preferably between 0.3 and 0.7 μm .
2. (Previously Presented) The support according to Claim 1, wherein the electrical permittivity of the low acoustic impedance material is less than about 4.
3. (Previously Presented) The support according to Claim 2, wherein the relative electrical permittivity of the low acoustic impedance material is less than about 2.5.
4. (Canceled).
5. (Previously Presented) The support according to Claim 1, wherein the low acoustic impedance material comprises porous SiOC.
6. (Previously Presented) The support according to claim 1, wherein it comprises no more than two bilayer assemblies.

7. (Currently Amended) The support according to claim 8 ~~1~~, wherein the high acoustic impedance material comprises at least one material selected from the group consisting of: aluminum nitride, copper, nickel, tungsten, gold, platinum, molybdenum.

8. (Currently Amended) A The support according to claim 1, for an acoustic resonator, comprising:

at least one bilayer assembly supporting an overlying acoustic resonator, comprising:
a layer of high acoustic impedance material; and
a layer of low acoustic impedance material made of a low electrical permittivity material,
wherein the low acoustic impedance material comprises SiOC;

wherein the layer of high acoustic impedance material has a thickness of between 0.3 and 3.2 μm .

9. (Canceled).

10. (Currently Amended) An acoustic resonator comprising:
an active element and
a support having at least one bilayer assembly supporting an overlying active element of the acoustic resonator, comprising:
a layer of high acoustic impedance material and
a layer of low acoustic impedance material made of a low electrical permittivity material, wherein the low-acoustic-impedance material comprises a SiOC material;
wherein the layer of low-acoustic-impedance material has a thickness of between 0.3 and 0.7 μm .
11. (Previously Presented) The resonator according to Claim 10, wherein the active element comprises at least one piezoelectric layer placed between electrodes.
- 12-15. (Canceled)
16. (Previously Presented) The support according to Claim 1, wherein the electrical permittivity of the low-acoustic-impedance material is less than about 3.
17. (Previously Presented) The resonator according to Claim 10, wherein the electrical permittivity of the low-acoustic-impedance material is less than about 4.
18. (Canceled).

19. (Currently Amended) The resonator according to Claim 20 ~~40~~, wherein the high-acoustic-impedance material comprises at least one material selected the group consisting of: aluminum nitride, copper, nickel, tungsten, gold, platinum, molybdenum.

20. (Currently Amended) An acoustic ~~The resonator according to Claim 10,~~
comprising:

an active element and
a support having at least one bilayer assembly supporting an overlying active element of
the acoustic resonator, comprising:

a layer of high acoustic impedance material and
a layer of low acoustic impedance material made of a low electrical permittivity material,
wherein the low-acoustic-impedance material comprises a SiOC material;

wherein the layer of high-acoustic-impedance material has a thickness of between 0.3
and 3.2 μm .

21. (Canceled).

22. (Previously Presented) The resonator according to Claim 10, wherein the support
comprises no more than two bilayer assemblies.

Claims 23-28. (Canceled).

29. (Currently Amended) An acoustic resonator of claim 10 comprising:
an active element and
a support having at least one bilayer assembly supporting an overlying active element of
the acoustic resonator, comprising:
a layer of high acoustic impedance material and
a layer of low acoustic impedance material made of a low electrical permittivity material,
wherein the low-acoustic-impedance material comprises a SiOC material;

wherein:

the layer of high acoustic impedance material rests on an interconnect layer of an integrated circuit, the layer of high acoustic impedance material being formed of a conductive material used in making interconnect layers of the integrated circuit; and

the layer of low acoustic impedance material is formed of an insulating material used in making interconnect layers of the integrated circuit, the layer of low acoustic impedance material resting on the layer of high acoustic impedance material and underlying the active element of the acoustic resonator.

30. (Previously Presented) The resonator as in claim 29 further comprising a second bilayer assembly resting on the bilayer assembly and underlying the active element of the acoustic resonator.

31. (Previously Presented) The resonator as in claim 29 further comprising a groove which laterally isolates the acoustic resonator from the interconnect layer of the integrated circuit.

32. (Previously Presented) The resonator as in claim 29, wherein the interconnect layer of the integrated circuit includes a trench region, the bilayer assembly being positioned within the trench region and embedded in the interconnect layer, with a groove about the acoustic resonator to provide for lateral isolation.

33. (Previously Presented) The resonator as in claim 32, wherein the layer of high acoustic impedance material is formed of a conductive material used in making the interconnect layer within which the bilayer assembly is embedded, and wherein the layer of low acoustic impedance material is formed of an insulating material used in making the interconnect layer within which the bilayer assembly is embedded.